

## REMARKS

Claims 1, 9 to 10, 13, 20 and 23 to 25 are pending.

Claims 1 to 2, 4 to 6, 9 to 10, 13 to 20, 23 to 30 and 33 to 34 were rejected under 35 U.S.C. §103(a) over Xiang et al., Schultz et al. and Salomaa et al. and claims 1 to 2, 4 to 6, 9 to 10, 13 to 20, 23 to 30 and 33 to 34 were rejected under 35 U.S.C. §103(a) over Xiang et al., Schultz et al., Jorgensen and Stahl.

### I. INCORRECT EXAMINATION STANDARD

Applicant has argued that the rejections are based on improper combinations of references and that even improperly combined, the references do not establish a *prima facie* case of obviousness.

The September 26, 2003 Final Rejection states “Applicant's arguments filed May 30, 2003 have been fully considered but they are not persuasive for the reasons of record and the following comments.” This is an incorrect statement of the standard for patent examination. The 35 U.S.C. 103(a) rejections are based on 35 U.S.C. 102(a) stating “A person shall be entitled to a patent *unless* (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent...” (emphasis added). A patent must be issued unless the PTO establishes a reason not to issue the patent, for example, by establishing a *prima facie* case of obviousness. With respect to a *prima facie* case, MPEP 2142 points out that:

.... The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness.

MPEP 2142.

Hence, the issue is not whether “Applicant’s argument has been .... found to be unpersuasive.” The issue is whether the PTO has met its burden of establishing a *prima facie* case of obviousness. In this case, the PTO has not met this burden. The rejections

are based on improper combinations of references without the motivation to combine required by *In re Lee*, 277 F.3d 1338, 61 USPQ 2d 1430 (Fed. Cir. 2002). Additionally, even improperly combined, the references do not make out a *prima facie* case of obviousness. See *In re Deuel*, 34 USPQ2d 1210 (Fed. Cir. 1995). The rejections should be withdrawn and the application examined in accordance with law.

## II. IMPROPER COMBINATION OF REFERENCES

The rejections are based on improper combinations of references.

To meet its burden of establishing a *prima facie* case of obviousness based on a combination of references, the PTO must provide an:

...objective teaching... [that] would lead [one skilled in the art] to combine the relevant teachings of the references.” *In re Fritch*, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992)

... “When patentability turns on the question of obviousness, the search for and analysis of the prior art includes evidence relevant to the finding of whether there is a teaching, motivation, or suggestion to select and combine the references relied on as evidence of obviousness. See, e.g., McGinley v. Franklin Sports, Inc., 262 F.3d 1339, 1351-52, 60 USPQ2d 1001, 1008 (Fed. Cir. 2001) (“the central question is whether there is reason to combine [the] references,” a question of fact drawing on the Graham factors).”

....

...The Board [PTO] must identify specifically the principle, known to one of ordinary skill, that suggests the claimed combination. In other words, the Board must explain the reasons one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious.”); *In re Fritch*, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992) (the examiner can satisfy the burden of showing obviousness of the combination “only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references”).

*In re Lee*, 277 F.3d 1338, 1343, 61 USPQ 2d 1430, 1433-1434 (Fed. Cir. 2002).

The PTO must provide “logical and rational” reasoning to support its determination (to reject on combined references). *In re Lee*, *supra* 277 F.3d at 1342, 61

USPQ 2d at 1432-1433. The PTO has not provided the “logical and rational” reasoning to combine references and the combination rejections should be withdrawn.

The invention relates to “[a] method to investigate properties of luminescence materials ...” (amended independent claim 1) and to a CHTS method comprising “aspirating a candidate luminescence material precursor and dispensing the precursor into a well of an array place” (independent claim 25).

Salomaa et. al, Jorgensen and Stahli have no relevance to “[a] method to investigate properties of luminescence materials ... or to the art of CHTS luminescent material dispensing.

The September 9, 2003 Final Rejection states:

In the Schultz reference as in the Xiang reference the dispenser that is explained in the greatest detail is the inkjet type of dispenser. In addition to this Schultz teaches that commercially available micropipetting apparatus can be adapted to dispense drop volumes of 5 nanoliters or less from a capillary. This is a clear recognition and teaching by one of skill in the art that commercially available micropipetting apparatus CAN BE ADAPTED TO DISPENSE volumes small enough to form volumes within the claimed range in the combinatorial synthesis process. These teachings of Schultz show that one of ordinary skill in the art would have known the possibility of using other types of commercially available dispensers.

Final Rejection page 7.

Applicant fails to understand the relevance of “micropipetting” or “ink jet” apparatus to the claimed invention. Neither device is a mechanical positive displacing device and neither has a capability of “mechanically positively displacing” as claimed. Neither device is relevant to the claimed invention.

Further, the referenced section of Schultz states in its entirety:

Moreover, in addition to the foregoing, *the various reactant components [of Schultz]* can be deposited into the reaction regions of interest from a dispenser in the form of droplets or powder. Conventional micropipetting apparatus can, for example, be adapted to dispense droplet volumes of 5 nanoliters or smaller from a capillary. Such droplets can fit within a

reaction region having a diameter of 300 .mu.m or less when a mask is employed. The dispenser can also be of the type employed in conventional ink-jet printers. Such ink-jet dispenser systems include, for example, the pulse pressure type dispenser system, the bubble jet type dispenser system and the slit jet type dispenser system. These ink-jet dispenser systems are able to deliver droplet volumes as small as 5 microliters. Moreover, such dispenser systems can be manual or, alternatively, they can be automated using, for example, robotics techniques. (Emphasis added.)

Schultz et al. col. 10, 60 to col. 11, line 8.line

The Shultz et al. teaching refers to dispensing mechanisms for dispensing the Schultz reactant components. Similarly, that “Jorgensen and Stahlh show similar teachings” only establishes that Jorgensen and Stahlh show mechanism for dispensing the Schultz reactant components.<sup>1</sup> Dispensing mechanisms and processes for dispensing the Schultz et al components are not relevant to the inventive mechanism and process to dispense high viscosity luminescent precursors.

Salomaa et. al, Jorgensen and Stahlh have no relevance to “[a] method to investigate properties of luminescence materials” or to the art of CHTS luminescent material dispensing. Why would one skilled in the art of investigating properties of luminescence materials or in the art of CHTS luminescent material dispensing have been led to combine a teaching of a method for forming mixtures or for serial dilution? See MPEP. 2141.01(a) and *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). The PTO has failed to answer the *In re Lee* “logical and rational” reasoning question to combine the Salomaa et. al, Jorgensen and Stahlh art with combinatorial art teachings and the rejections should be withdrawn.

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<sup>1</sup> The Final Rejection (page 8) also states that Stahlh and Jorgensen add “ that a positive displacement dispenser can dispense reproducible volumes independent of viscosity or solvent effects. From this it is clear that not all dispensers are capable of dispensing reproducible volumes as viscosity or solvent change.” Applicant is unable to find such a teaching in either reference. .” “[W]hen the PTO asserts that there is an explicit or implicit teaching or suggestion in the prior art, it must indicate where such a teaching or suggestion appears in the reference....” *In re Rijckaert*, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993). If the PTO intends to rely on such a teaching, it must point out where the teaching appears in Stahlh and Jorgensen.

## **II. THE REFERENCES FAIL TO ESTABLISH A PRIMA FACIE CASE OF OBVIOUSNESS**

Applicant has argued that even improperly combined, the references do not make a *prima facie* case of obviousness of the claimed invention. PTO has failed to address or fully address (1) a precursor “displaced within a linear dynamic range of at least 20 nanoliter to about 100 micro-liter” (all claims), (2) a precursor viscosity of greater than about 1 centipoise, (3) a fluid suspension of a particle size of up to about 50 $\mu$ m, or (4) a CHTS method comprising “(B) reiterating (A) wherein a successive candidate luminescence material precursor for a step (i) is selected as a result of an evaluating step (iii) of a preceding iteration of (A).”

### **(1) THE REFERENCES DO NOT MAKE OUT A PRIMA FACIE CASE OF A LINEAR DYNAMIC RANGE OF AT LEAST 20 NANO-LITER TO ABOUT 100 MICRO-LITER**

Applicant previously argued:

The Final Rejection page 6 states:

If one looks at lines 15-20 of page 6, it is clear that the instant invention uses a stepping motor to control the volume of solution. Thus the instant invention uses discrete volume steps to make the different volumes that are dispensed. As such it appears that applicant is not capable of dispensing volumes of any amount in the claimed range, but is limited to the volumes that can be produced by the discrete steps of the stepping motor.

Applicant fails to understand this argument. The issue is whether the references make out a *prima facie* case of the claimed invention. The claimed invention includes no “stepping motor.” The claimed invention claims “a linear dynamic range of from greater than 20 nano-liter to about 100 micro-liter” not a stepping motor.

Further the Final Rejection page 6, states:

More importantly this is the same method that Stahl uses to dispense the volumes taught therein and “linear dynamic range” does not define over what is taught by the combination of references.

But, a “volume” is not a teaching of a “linear dynamic range.”

Applicant's February 20 Amendment, page 6 argued:

The references do not make out a prima facie case of obviousness of a precursor viscosity of greater than about 1 centipoise (claims 1, 2, 4 to 6, 8 to 20, 23 and 24). The PTO states "[t]hese two references (Xiang and Stahl) also clearly deal with any issues of viscosity." "[W]hen the PTO asserts that there is an explicit or implicit teaching or suggestion in the prior art, it must indicate where such a teaching or suggestion appears in the reference...." *In re Rijckaert*, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993). The PTO fails to point out where any of the alleged Xiang and Stahl precursor viscosity teachings appear in the references. The PTO should respond to this argument in a non-final Office Action or allow the claims.

The Final Rejection Section 5, page 8 states:

From the Jorgensen reference it is clear that delivery of volumes through a pipette (needle) in the nanoliter range is clearly possible. From the Stahl reference it is clear that delivery of fluid at least covering the specific range taught by Xiang is possible with a micropipettor. These two references also clearly deal with any issues of viscosity.

This statement is not responsive to Applicants' argument. "The examiner bears the burden of establishing a prima facie case of obviousness. In *re Rijckaert*, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993); In *re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). MPEP 2143 states that "[t]o establish a prima facie case of obviousness,... the prior art reference (or references when combined) must teach or suggest all the claim limitations." The references fail to teach or suggest "a precursor viscosity of greater than about 1 centipoise." The PTO states that "[t]hese two references [Jorgensen and Stahl?] also clearly deal with any issues of viscosity. However, the PTO fails to point out where the relevant "precursor viscosity of greater than about 1 centipoise" teachings appear in the references. If the PTO is relying on these references, "then the PTO must indicate where the "teaching or suggestion" appears in the references. *In re Rijckaert*, *supra*.

The Final Rejection also refers to Louderback et al. column 2, lines 36-42. However, this reference is not applied as of record. If the PTO intends to rely on this reference, it must withdraw the finality of the rejection and issue another office action stating the reference as a basis of rejection and explaining the relevance of its teaching.

Applicant has examined the references and can find no teaching of "a

precursor viscosity of greater than about 1 centipoise.” The PTO is respectfully requested to allow the claims or to withdraw the Final Rejection and to issue another non-final action to point out where the alleged “precursor viscosity of greater than about 1 centipoise” teaching appears. *In re Rijckaert, supra*.

The September 26 Final rejection page 8 argues:

Relative to the viscosity in the claims, the cited Louderback and Tezuka references were not applied because they simply place the claimed "greater than about 1 centipoise" language in perspective to the inherent properties of blood and water. Since according to the Louderback reference water has a viscosity of 1.002 centipoises (0.01002 poises x 100 centipoises/poise), the instant claims include water as a liquid having the claimed viscosity. Thus Salomaa teaches a dispenser that clearly does not have problems dispensing liquids of greater than 1 centipoise and any arguments to that effect are clearly not relevant to the claims since water is a liquid having the required viscosity. Thus there is no need to incorporate the Louderback or Tezuka references into the rejections of record because the viscosity of the aqueous materials in the references all inherently exceed the required minimum viscosity!

But this argument is not relevant to “displacing a first luminescence material precursor” having “a viscosity of greater than about 1 centipoise to about 100 centipoise.”<sup>2</sup> The references do not establish a *prima facie* case of obviousness of displacing precursors having “a viscosity of greater than about 1 centipoise to about 100 centipoise.

**(3) THE REFERENCES DO NOT MAKE OUT A PRIMA FACIE CASE OF A FLUID SUSPENSION OF A PARTICLE SIZE OF UP TO ABOUT 50 $\mu$ M**

The September 9 Final Rejection page 9 argues:

Relative to the particle suspension of claim 24, Schultz clearly teaches dispensing particle suspensions as part of the mixture to form the various materials, therefore determination of proper particle size would have been an optimization issue or an issue clearly covered by the particle suspensions (whole blood) dispensed in the other applied references. For these reasons applicant's arguments are unpersuasive.

Applicant has examined the references and has found no teaching of the claimed

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<sup>2</sup> Now “precursors selected from the group consisting of Y(NO<sub>3</sub>)<sub>3</sub>, Gd(NO<sub>3</sub>)<sub>3</sub>, Lu(NO<sub>3</sub>)<sub>3</sub>, Al(NO<sub>3</sub>)<sub>3</sub>,

“particle suspension.” “Optimization issue” is not a proper basis of rejection. A proper rejection is based on what is taught in the references. “[W]hen the PTO asserts that there is an explicit or implicit teaching or suggestion in the prior art, it must indicate where such a teaching or suggestion appears in the reference....” In re Rijckaert, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993). The PTO must point out in the references where displacing precursors comprising a “fluid suspension of a particle size of up to about 50 $\mu$ m” or withdraw the rejection.

**(4) THE REFERENCES DO NOT MAKE OUT A PRIMA FACIE CASE OF OBVIOUSNESS OF A CHTS METHOD COMPRISING “(B) REITERATING (A) WHEREIN A SUCCESSIVE CANDIDATE LUMINESCENCE MATERIAL PRECURSOR FOR A STEP (I) IS SELECTED AS A RESULT OF AN EVALUATING STEP (III) OF A PRECEDING ITERATION OF (A)”**

Applicants’ February 20, 2003 Amendment argued that the references do not make out a *prima facie* case of obviousness of a CHTS method comprising “(B) reiterating (A) wherein a successive candidate luminescence material precursor for a step (i) is selected as a result of an evaluating step (iii) of a preceding iteration of (A)” (claim 26). Applicants also made this argument in the December 9 Request for Reconsideration.

The Final Rejection fails to respond to this argument. The rejection of claim 26 must be withdrawn.

**III. THE REFERENCES DO NOT TEACH OR SUGGEST THE AMENDED CLAIMS**

The references do not teach or suggest a “first  $(Y_xA_{1-x})_3(Al_yGa_{1-y})_5O_{12}:Ce^{3+}_{0.06}(A: Gd, Lu)$  library of materials” and do not teach or suggest “determining wavelength and emission intensity of fluorescence of the first  $(Y_xA_{1-x})_3(Al_yGa_{1-y})_5O_{12}:Ce^{3+}_{0.06}(A: Gd, Lu)$  library of materials under an applied UV excitation; and defining a next  $(Y_xA_{1-x})_3(Al_yGa_{1-y})_5O_{12}:Ce^{3+}_{0.06}(A: Gd, Lu)$  library of candidate luminescence materials according to the determined wavelength and emission” as claimed in the amended claims.

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$Ga(NO_3)_3$  and  $Ce(NO_3)_3$ ” having the claimed viscosity.



For this additional reason, the claims should be allowable.

#### IV. IMPROPER FINAL REJECTION

The PTO has failed to address or fully address (1) a precursor “displaced within a linear dynamic range of at least 5 nano-liter (now 20 nanoliter to about 100 micro-liter)” (all claims), (2) a precursor viscosity of greater than about 1 centipoise, (3) a fluid suspension of a particle size of up to about 50 $\mu$ m or (4) a CHTS method comprising “(B) reiterating (A) wherein a successive candidate luminescence material precursor for a step (i) is selected as a result of an evaluating step (iii) of a preceding iteration of (A).”

Further, the present Office Action is an improper final rejection. The September 26 Final Rejection states:

All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP §706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

This is incorrect. MPEP §706.07(b) and supporting Patent Rule 37 CFR 1.136(a) solely apply to “a continuing application of, or a substitute for, an earlier application.” An RCE is neither. RCE’s are governed by 37 CFR 1.114 and MPEP 706.07(h). 37 CFR 1.114 where relevant, states:

(d) If an applicant timely files a submission and fee set forth in § 1.17(e), the Office *will* withdraw the finality of any Office action and the submission will be entered and considered. If an applicant files a request for continued examination under this section after appeal, but prior to a decision on the appeal, it will be treated as a request to withdraw the appeal and to reopen prosecution of the application before the examiner. An appeal brief under § 1.192 or a reply brief under § 1.193(b), or related papers, will not be considered a submission under this section. (Emphasis added.)

In accordance with 37 CFR 1.114, applicant requests that the finality of the present Office Action be withdrawn and that the application be allowed or that another non-final Office Action be issued addressing all issues of improper combinations of references and failure to establish a *prima facie* case.<sup>3</sup>

In the alternative, in accordance with MPEP 713.01, Applicant hereby requests an examiner interview with the Examiner and the Supervisory Primary Examiner prior to the next office action to address the improper finality of the present office action and to address issues of improper combinations of references and failure to establish a *prima facie* case.

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<sup>3</sup> Applicant has filed an RCE accompanied by the appropriate fee to assure consideration of this Amendment. However, Applicant includes a Request For Refund with the RCE in respect of the improper final rejection.

**V. CONCLUSION**

The above amendments only incorporate dependent claims into independent claims and cancel claims. They add no new issues and reduce the issues for appeal. The amendments place the application in better condition for allowance. The Final Rejection is an improper final action and should be withdrawn. Thus, entry of the amendments is requested under 37 CFR §1.116. In view of the foregoing amendments and remarks, reconsideration and allowance of claims 1, 9 to 10, 13, 20 and 23 to 25 are respectfully requested.

Should the Examiner believe that any further action is necessary in order to place this application in condition for allowance, he is requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,



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